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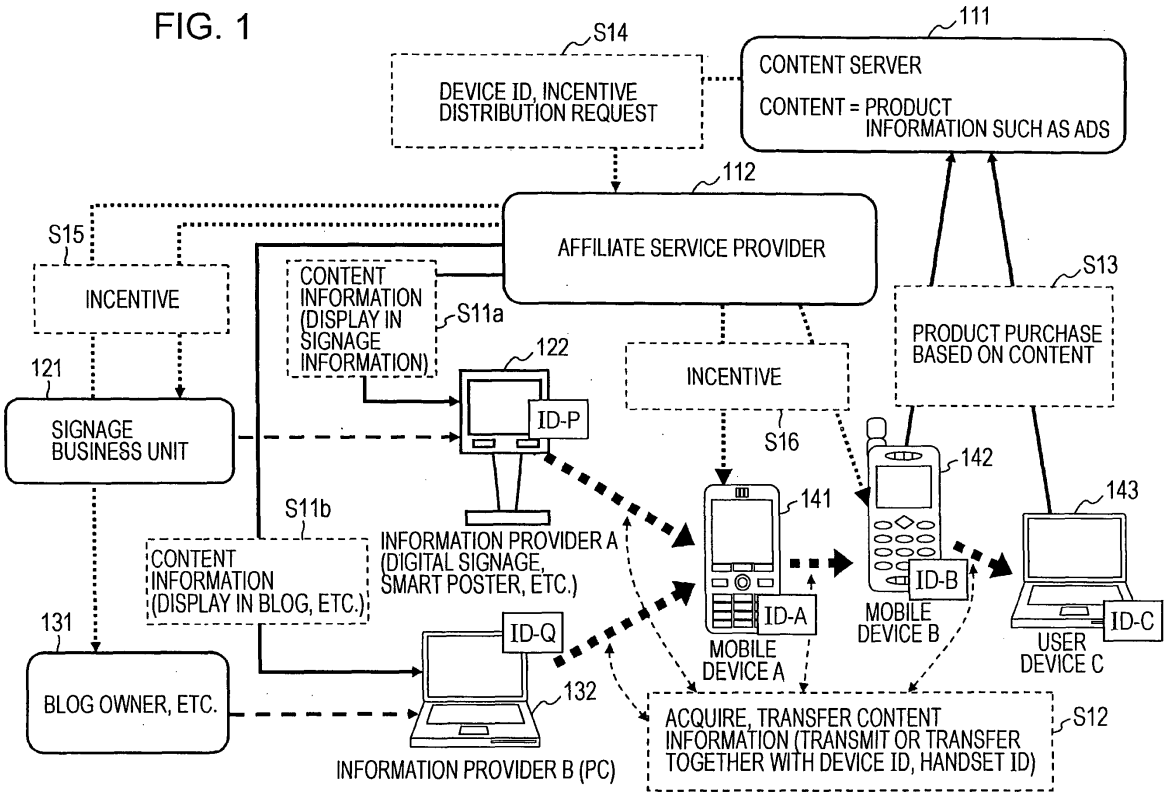
(54) Information processing system, information processing apparatus, information processing method, and computer program product

(57) An information processing apparatus operates as a managing server that distributes incentive using transfer device information with respect to content. A communication unit receives inter-device transfer information with respect to output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers. A controller then executes processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers. In so doing, incentive can be distributed to the managers or users of user devices that relay content between an information providing device and a product purchaser.

FIG. 1



EP 2 120 202 A2

Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to an information processing system, an information processing apparatus, an information processing method, and a computer program product. More particularly, the present invention relates to an information processing system, an information processing apparatus, an information processing method, and a computer program product whereby inter-device transfer of content (such as product information provided by digital signage or other devices) is tracked, and incentive is distributed using the tracking information.

2. Description of the Related Art

[0002] Digital signage is a system wherein advertisements or other information is displayed and provided to users on displays installed in public places and shops, for example. Other systems provide posters with microchips that can communicate at close-range, and include functions for outputting information from the microchip to a user's smart card (i.e., an integrated circuit card). In recent years, such systems have come to be used.

[0003] In one exemplary system, an IC and antenna are provided to equip digital signage or a smart poster with an RFID (Radio Frequency IDentification) tag enabling contactless communication. When a user's smart card with contactless communication functions is brought near the RFID tag, information stored in the memory of the RFID tag (such as product information) is transmitted to the user's smart card and accumulated in internal memory.

[0004] When utilizing the information accumulated in the smart card, the user touches or holds up the smart card to a PC having read/write (R/W) functions, thereby outputting the accumulated information in the smart card to the PC, and enabling the accumulated information to be displayed on the display of the PC. An information provision system like the above is disclosed in Japanese Unexamined Patent Application Publication No. 2002-269508, for example.

[0005] Furthermore, an advertising technique referred to as affiliate marketing has also come into use as a new advertising technique in recent years. In affiliate marketing, links to advertisement sites or retail sites for various products are established on blogs or informational websites, for example. If viewers of the blogs or websites then view the linked advertisement sites or retail sites, incentive is paid to the provider of the blog or informational site with the established links. In many cases, the number of views of the product advertisement sites or retail sites are counted, and incentive is paid according to the count.

[0006] Affiliate marketing is typically used on blogs or websites on the Internet, in a structure wherein a count is kept for the number of times a linked advertisement site or product retail site is accessed, and incentive is computed on the basis of management information in a management server that computes incentive.

[0007] However, in affiliate marketing systems of the related art, only the number of direct accesses is monitored for a link established on a blog or website with respect to a product advertisement product retail site. For example, a given user A may acquire product information with his or her own user device and subsequently provide the acquired information to another user B, but most systems are not configured to pay incentive to user A in this case. Thus there is a problem in that, if user B purchases a product, then even though user A has contributed to user B's process of purchasing the product, the providing of product information to user B by user A is not tracked in current affiliate systems.

SUMMARY OF THE INVENTION

[0008] Being devised in light of the problems described above by way of example, the present invention provides an information processing system, an information processing apparatus, an information processing method, and a computer program product whereby product information transfer among user devices is tracked, thereby enabling the provision of incentive or other rewards to those who transfer product information.

[0009] An information processing apparatus in accordance with a first embodiment of the present invention operates as a managing server that distributes incentive using transfer device information with respect to content, and includes: a communication unit configured to receive inter-device transfer information for output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers; and a controller configured to execute processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

[0010] Furthermore, in the information processing apparatus in accordance with an embodiment of the present invention, the controller may be configured to execute processing to designate the incentive recipients as being the manager of the information providing device and the device manager associated with the device identifier of the user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

[0011] Furthermore, in the information processing apparatus in accordance with an embodiment of the present invention, the controller may be configured to execute processing to designate the incentive recipients as being the manager of the information providing device and the device managers associated with the device identifiers of all devices on the content transfer route leading to the

user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

[0012] Furthermore, in the information processing apparatus in accordance with an embodiment of the present invention, the managing server may be configured to dynamically set or modify the incentive distribution ratios for the incentive recipients.

[0013] An information processing apparatus in accordance with a second embodiment of the present invention operates as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, and includes: a communication unit configured to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for the content transmitting user device; a storage unit configured to store data received by the communication unit; and a controller configured such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with both the identifier of the information providing device and the device identifier of the apparatus itself.

[0014] Furthermore, in the information processing apparatus in accordance with an embodiment of the present invention, the communication unit may be configured such that, when receiving the content, the communication unit receives the device identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device. The controller may then be configured such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with the identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device, as well as the device identifier of the apparatus itself.

[0015] An information processing system in accordance with a third embodiment of the present invention includes: a content providing server that provides content; a managing server that executes output management of content to devices, as well as incentive distribution management using transfer device information with respect to the output content; an information providing device that initially outputs the content; and a plurality of user devices that acquire the output content from the information providing device or execute inter-device transfer of such content. In the system, when transferring content, the content transmitting user device that executes content transfer additionally transmits an identifier for the information providing device, as well as an identifier for the content transmitting user device. The content receiving user device that receives the content stores the identifier of the information providing device and the identifier of the content transmitting user device in memory. When making a product purchase on the basis of viewing the content, the content receiving user device outputs the device identifiers stored in memory. The managing server then uses the device identifiers output from a user device at the time of product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

[0016] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the content transmitting device may be configured such that, when transferring content, the content transmitting device additionally transmits an identifier for the information providing device, an identifier for the content transmitting device, as well as identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device. The content receiving user device may then be configured to store identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device in memory. When making a product purchase on the basis of viewing the content, the content receiving device outputs the device identifiers stored in memory. The managing server may then be configured to use the device identifiers for all devices on the content transfer route that were output from a user device at the time of the product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

[0017] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the content receiving user device may be configured such that, when making a product purchase on the basis of viewing the content, the content receiving device issues a notification to the content providing server containing the device identifiers stored in memory. The managing server may then be configured to use the device identifiers of the devices on the content transfer route that were issued to the content providing server to designate the incentive recipients as being the device managers associated with the device identifiers.

[0018] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the information providing device that initially outputs the content may be a public terminal enabling information acquisition therefrom by user devices.

[0019] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the information providing device that initially outputs the content may be a device that presents information, thereby enabling information acquisition therefrom over a network.

[0020] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the content may be product advertising content. The plurality of user devices may then be configured such that, when making a product purchase on the basis of viewing the advertising content, the purchasing user device issues a notification to the content providing server containing the device identifiers stored in memory.

[0021] Furthermore, in the information processing system in accordance with an embodiment of the present invention, the managing server or the content providing server may be configured to dynamically set or modify the incentive distribution ratios for the incentive recipients.

[0022] An information processing method in accordance with a fourth embodiment of the present invention includes the steps of: causing a content providing server to provide content; causing a managing server to execute output management of content to devices, as well as incentive distribution management using transfer device information with respect to the output content; causing an information providing device to initially output the content; when executing processing to transfer content output from the information providing device, causing a content transmitting user device to additionally transmit an identifier for the information providing device, as well as an identifier for the content transmitting device; causing a content receiving user device to store the identifier of the information providing device and the identifier of the content transmitting user device in memory, and when making a product purchase on the basis of viewing the content, causing the content receiving user device to output the device identifiers stored in memory; and causing a managing server to use the device identifiers output from a user device at the time of the product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

[0023] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the content transmitting device may be made to operate such that, when transferring content, the content transmitting device additionally transmits an identifier for the information providing device, an identifier for the content transmitting device, as well as identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device. The content receiving user device may then be made to store identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device in memory. When making a product purchase on the basis of viewing the content, the content receiving device is made to output the device identifiers stored in memory. The managing server may then be made to use the device identifiers of all devices on the content transfer route that were output from a user device at the time of the product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

[0024] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the content receiving user device may be made to operate such that, when making a product purchase on the basis of viewing the content, the content receiving user device issues a notification to the content providing server containing the device identifiers stored in memory. The managing server may then be made to use the device identifiers of the devices on the content transfer route that were issued to the content providing server to designate the incentive recipients as being the device managers associated with the device identifiers.

[0025] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the managing server or the content providing server may set or modify the incentive distribution ratios for the incentive recipients.

[0026] An information processing method in accordance with a fifth embodiment of the present invention is executed by an information processing apparatus operating as a managing server that executes incentive distribution management using transfer device information with respect to content, the method including the steps of: causing a communication unit to receive inter-device transfer information with respect to output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers; and causing a controller to execute processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

[0027] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the controller may be made to execute processing to designate the incentive recipients as being the manager of the information providing device and the device manager associated with the device identifier of the user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

[0028] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the controller may be made to execute processing to designate the incentive recipients as being the manager of the information providing device and the device managers associated with the device identifiers of all devices on the content transfer route leading to the user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

[0029] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the managing server may be configured to dynamically set or modify the incentive distribution ratios for the incentive recipients.

[0030] An information processing method in accordance with a sixth embodiment of the present invention is executed by an information processing apparatus operating as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, the method including the steps of: causing a communication unit to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for one or more con-

tent-transmitting user devices; causing a controller to store data received in the communicating step in a storage unit; and causing the controller to operate such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with both the identifier of the information providing device and the device identifier of the apparatus itself.

[0031] Furthermore, in the information processing method in accordance with an embodiment of the present invention, the communication unit may be made to operate such that, when receiving the content, the communication unit receives the device identifiers of all devices on the content transfer route leading from the information providing device to the content transmitting user device. The controller may then be made to operate such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with the identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device, as well as the device identifier of the apparatus itself.

[0032] A computer program product in accordance with a seventh embodiment of the present invention causes information processing to be executed in an information processing apparatus operating as a managing server that executes incentive distribution management using transfer content device information with respect to content, the program product causing execution of the steps of: causing a communication unit to receive inter-device transfer information with respect to output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers; and causing a controller to execute processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

[0033] A computer program product in accordance with an eighth embodiment of the present invention causes information processing to be executed in an information processing apparatus operating as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, the program product causing execution of the steps of: causing a communication unit to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for one or more content transmitting user devices; causing a controller to store data received in the communicating step in a storage unit; and causing the controller to operate such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with both the identifier of the information providing device and the device identifier of the apparatus itself.

[0034] A computer program product in accordance with an embodiment of the present invention may be a computer program, providable by means of a storage medium or communication medium, provided in a computer-readable format to a general-purpose computer system able to execute various program code, for example. By providing such a program in a computer-readable format, processing in accordance with the program is realized on the computer system.

[0035] Further features and advantages of the present invention will become apparent upon reading of the following detailed description of exemplary embodiments in conjunction with the attached drawings. Furthermore, in the present specification, a system refers to the logical assembly of a plurality of apparatus, and is not limited to respective apparatus being housed in a single physical unit.

[0036] According to an embodiment of the present invention, when a product purchase is made by referring to product advertising or other content transferred among a plurality of user devices, identifiers for the one or more user devices that transferred the content are additionally transferred and stored in the memory of a user device at the time of inter-device content transfer. A managing server then acquires these device identifiers, thereby enabling the managing server to distribute incentive to device managers or users specified by the acquired device identifiers.

BRIEF DESCRIPTION OF THE DRAWINGS

[0037]

Fig. 1 is a diagram explaining the configuration and exemplary processing of an information processing system in accordance with an embodiment of the present invention;

Fig. 2 is a diagram explaining exemplary data transferred and stored among respective apparatus and respective devices in an information processing system in accordance with an embodiment of the present invention;

Fig. 3 is a diagram explaining exemplary data transferred and stored among respective apparatus and respective devices in an information processing system in accordance with an embodiment of the present invention;

Fig. 4 is a diagram explaining exemplary data transferred and stored among respective apparatus and respective devices in an information processing system in accordance with an embodiment of the present invention; and

Fig. 5 is a diagram explaining an exemplary configuration of an apparatus constituting an information processing system in accordance with an embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0038] Hereinafter, an information processing system, an information processing apparatus, an information

processing method, and a computer program product in accordance with embodiments of the present invention will be described in detail and with reference to the accompanying drawings.

[0039] Fig. 1 illustrates an exemplary configuration of an information processing system in accordance with an embodiment of the present invention. The content providing server 111 provides content in the form of advertising or other product information related to user-purchasable products to a managing server 112. The managing server 112 (i.e., an affiliate service provider) then presents the above content to information providing devices 122 and 132.

[0040] The managing server 112 is an advertising management server. More specifically, the managing server 112 presents content provided by a content providing server to the information providing devices 122 and 132. In addition, the managing server 112 also provides and distributes incentive following affiliate marketing techniques. The processing for the above will be later described.

[0041] Fig. 1 shows just a single content providing server, a single managing server, and two information providing devices, but it should be appreciated that Fig. 1 merely illustrates the relationships among representative apparatus, and that it is possible for a large number of such apparatus to exist on a network. Fig. 1 also shows just three user devices: a user device A 141, a user device B 142, and a user device C 143. However, a large number of user devices in addition to the above may also exist.

[0042] A variety of apparatus are usable as the above information providing devices. In the example shown in Fig. 1, the information providing device A 122 is an apparatus such as one of the following: digital signage that displays advertisements or other information to users on a display installed in a public place or shop; or, a smart poster provided with a microchip that can communicate at close-range and including functions for outputting information from the microchip to a user device. The information provided via the information providing device A 122 is managed by a signage business unit 121, for example.

[0043] As a more specific exemplary configuration of the information providing device A 122, consider a device equipped with an RFID (Radio Frequency IDentification) tag provided with an IC and an antenna enabling contactless communication. When a user's smart card, mobile phone, or similar user device A 141 with contactless communication functions approaches (i.e., is held near) the RFID tag, information stored in the memory of the RFID tag (such as product information) is transmitted to the user device A 141 and accumulated in internal memory.

[0044] Meanwhile, the information providing device B 132 is an Internet-connected PC or similar device. Various information can thus be presented by the information providing device B 132, as managed by a specific blog or other site owner 131. The information presented by the information providing device B 132 may be made viewable by being displayed on the user device A 141 over a network, and viewed information may be accumulated in the internal memory of the user device A 141.

[0045] Product advertising or similar content provided by the content providing server 111 is provided to the information providing device A 122 and the information providing device B 132 via the managing server 112, thereby causing both the information provided to the signage business unit 121 and the information provided to the blog or other site owner 131 to be presented.

[0046] The user device A 141 then acquires, from the information providing device A 122 or the information providing device B 132, the product advertising or similar content that was provided to the above information providing devices by the content providing server 111. The user device A 141 then accumulates the acquired content in internal memory. In the present embodiment, the information providing device A 122 and the information providing device B 132 that provide information to the user device A 141 output the content (i.e., the product information) together with their respective device identifiers (i.e., device IDs) to the user device A 141 at the time of information acquisition. The user device A 141 then stores content (i.e., the product information) in memory, together with the device ID of the information providing device A 122 or the information providing device B 132 from which the information was acquired.

[0047] Furthermore, it is also possible for the user device A 141 to transmit content accumulated in memory to a user device B 142 owned by another user. The user device B 142 then accumulates the transmitted content in internal memory. At the time of the above content transfer, the content transmitting user device A 141 outputs the content together with the device ID for the content acquisition source (i.e., the information providing device A 122 or the information providing device B 132) that was stored in memory at the time of the earlier content acquisition. Moreover, the user device A 141 also outputs the above together with its own ID (i.e., the device ID of the user device A 141).

[0048] The user device B 142 then performs one of the following, depending on the content transfer route:

(1) if content is received via the route leading from the information providing device A 122, to the user device A 141, to the user device B 142, then the content, the ID of the information providing device A 122, and the ID of the user device A 141 are stored in the memory of the user device B 142; or

(2) if content is received via the route leading from the information providing device B 132, to the user device A 141, to the user device B 142, then the content, the ID of the information providing device B 132, and the ID of the user device A 141 are stored in the memory of the user device B 142.

In this way, the user device B 142 stores the content in

memory, together with specific device IDs that depend on the content acquisition route.

[0049] It is also possible for the user device B 142 to transmit content accumulated in memory to a user device C 143 owned by another user. The user device C 143 then accumulates the transmitted content in internal memory.

[0050] The user device C 143 performs one of the following, depending on the content transfer route:

(3) if content is received via the route leading from the information providing device A 122, to the user device A 141, to the user device B 142, to the user device C 143, then the content, the ID of the information providing device A 122, the ID of the user device A 141, and the ID of the user device B 142 are stored in the memory of the user device C 143; or
(4) if content is received via the route leading from the information providing device B 132, to the user device A 141, to the user device B 142, to the user device C 143, then the content, the ID of the information providing device B 132, the ID of the user device A 141, and the ID of the user device B 142 are stored in the memory of the user device C 143.

In this way, the user device C 143 stores the content in memory, together with specific device IDs that depend on the content acquisition route.

[0051] Thus, the user owning the user device B 142 views content (i.e., advertising) acquired via one of the following routes:

(1) from the information providing device A 122, to the user device A 141, to the user device B 142; or
(2) from the information providing device B 132, to the user device A 141, to the user device B 142. If the user of the user device B 142 likes the product described in the advertising, then that user is able to make a product purchase from the content providing server 111.

[0052] Similarly, the user owning the user device C 143 views content (i.e., advertising) acquired via one of the following routes:

(3) from the information providing device A 122, to the user device A 141, to the user device B 142, to the user device C 143; or
(4) from the information providing device B 132, to the user device A 141, to the user device B 142, to the user device C 143.

If the user of the user device C 143 likes the product described in the advertising, then that user is able to make a product purchase from the content providing server 111.

[0053] At the time of a product purchase, the user device B 142, for example, transmits to the content providing server 111 the acquisition route information included in the content information stored in the memory of the user device B 142. In other words, the user device B 142 transmits content acquisition route information containing one of the following sets of information:

(1) the ID of the information providing device A 122 and the ID of the user device A 141; or
(2) the ID of the information providing device B 132 and the ID of the user device A 141.

The content providing server 111 then provides the content acquisition route information to the managing server 112.

[0054] Similarly, at the time of a product purchase, the user device C 143 transmits to the content providing server 111 the acquisition route information included in the content information stored in the memory of the user device C 143. In other words, the user device C 143 transmits content acquisition route information containing one of the following sets of information:

(3) the ID of the information providing device A 122, the ID of the user device A 141, and the ID of the user device B 142; or
(4) the ID of the information providing device B 132, the ID of the user device A 141, and the ID of the user device B 142.

The content providing server 111 then provides the content acquisition route information to the managing server 112.

[0055] Following the route information acquired from the content providing server 111, the managing server 112 provides incentive or other rewards to the managers or users of devices on the content route. In other words, the managing server 112 uses the device identifiers output from a user device at the time of a product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

[0056] In this way, in the present embodiment, not only is the original output device (i.e., the information providing device A 122 or the information providing device B 132) of the content tracked, but in addition, user devices that transferred content along the content route (i.e., devices such as the user device A 141 and the user device B 142) are also tracked, thereby enabling incentive or other rewards to be provided to the users of the devices along the content route. It should be appreciated herein that incentive can take many forms, such as cash, points, some kind of privileges or preferential information, or the provision of complimentary content, for example.

[0057] At the time of content transfer between user devices, the particular device IDs received by the content receiving device may be determined according to one of the following processing examples:

(Processing example 1) content is received together

with two device IDs: the device ID of the original content source, and the device ID of the previous content transmitter that directly transmitted the content; or

(Processing example 2) content is received together with the device ID of the original content source, the device ID of the previous content transmitter that directly transmitted the content, as well as the device IDs of all content transferring devices existing along the route leading from the original source to the previous content transmitter.

Herein, it is assumed that one of the above processing examples is implemented.

[0058] The processing sequence of steps S11 to S16 shown in Fig. 1 will now be described. Steps Slla and Sllb illustrate content (i.e., the product advertising or other content provided by the content providing server 111) being displayed by the information providing device A 122 and the information providing device B 132. In the example shown in Fig. 1, the information providing device A 122 and the information providing device B 132 act as original sources of content information.

[0059] The subsequent step S12 is the acquisition and transfer of content information by the user devices A to C (141 to 143). At the time of content acquisition and transfer, each user device receives the content together with the device ID of the original content source and at least the device ID of the previous content transmitter. At this point, the user devices may also be made to transfer and receive the device ID of the original content source as well as the device IDs of all devices on the content transmission route.

[0060] In step S13, a product purchase is made with respect to the content (such as product advertising) presented on the user device B 142 or the user device C 143 after being received thereby. At the time of product purchase, the user device B 142 or the user device C 143 receives the product or product-related information, while additionally transmitting device information stored in memory to the content providing server 111. In other words, the user device B 142 or the user device C 143 transmits device IDs stored in memory to the content providing server 111 according to one of the following processing examples:

(Processing example 1) two device IDs are transmitted: the device ID of the original content source, and the device ID of the previous content transmitter that directly transmitted the content; or

(Processing example 2) the device ID of the original content source and the device ID of the previous content transmitter that directly transmitted the content are transmitted, as well as the device IDs of all content-transferring devices existing along the route leading from the original source to the previous content transmitter.

[0061] In step S14, the content providing server 111 informs the managing server 112 of the device ID information acquired from the content purchasing user device, and subsequently requests incentive distribution.

[0062] On the basis of the device ID information received from the content providing server 111, the managing server 112 distributes incentive provided by the content providing server to the managers and users of the devices associated with the device IDs.

[0063] Herein, the managing server 112 retains association information associating the device IDs with the managers and users associated therewith. The managing server 112 then operates in accordance with the association information to specify the managers and users associated with the device IDs, and then provide incentive to the specified managers and users.

[0064] However, it should be appreciated that the content providing server 111 may also manage association information associating the device IDs with the managers and users associated therewith. The content providing server 111 may then specify the managers and users associated with the device IDs received from a user device, and issue a notification to the managing server 112 containing the specified managers and users. The managing server 112 may then follow the notification information to provide incentive to the specified managers and users.

[0065] In this way, in the process in accordance with an embodiment of the present invention, not only is the original output device of content tracked, but in addition, user devices on the content route that transferred content are also tracked, thereby enabling the provision of incentive or other rewards to the users of devices on the content transfer route.

[0066] Herein, the managing server or the content providing server may also dynamically set or modify the incentive distribution ratios for the incentive recipients.

[0067] Exemplary data sent and received among respective devices in a content transfer process in accordance with an embodiment of the present invention will now be described with reference to Fig. 2 and subsequent drawings.

[0068] In the examples shown in Figs. 2 and 3, exemplary transfer data is shown for the case wherein the information providing device A 122 shown in Fig. 1 acts as the original source of the content (such as advertising information), and wherein the content is subsequently transferred to the user device A 141, the user device B 142 and the user device C 143, in that order. Furthermore, a processing example is implemented wherein each user device sends and receives content together with the device IDs of all devices existing on the content transfer route.

[0069] First, as shown in Fig. 2, the information providing device A 122 is storing the data 211 to 213 in internal memory, and then outputs the data 211 to 213 to a user device A. The user device A 141 receives the data 211 to 213 from the information providing device A 122, and then stores the data 221 to 223 in its own memory.

[0070] The data 211 to 213 stored in the memory of the information providing device A 122 contains the following information:

(1) an identifier indicating the original information source; herein, the ID (ID-P) of the information providing device A (a smart poster);
(2) an identifier indicating the previous information transmitter; herein, none; and
(3) the product advertising or other content information.

[0071] The information providing device A 122 outputs the data 211 to 213 shown in Fig. 2 to the user device A 141. Herein, the ID [ID-P] of the transmitter is also sent at the time of data transmission.

[0072] Using the data 211 to 213 and the previous data transmitter ID [ID-P], the user device A 141 stores the data 221 to 223 shown in Fig. 2 in its own memory. More specifically, the data 221 to 223 contains the following information:

(1) an identifier indicating the original information source; herein, the ID [ID-P] of the information providing device A (a smart poster);
(2) an identifier indicating the previous information transmitter; herein, the ID [ID-P] of the information providing device A (a smart poster); and
(3) the product advertising or other content information.

[0073] Next, the user device A 141 outputs the data 221 to 223 shown in Fig. 2 to the user device B 142. Herein, the ID [ID-A] of the transmitter is also sent at the time of data transmission.

[0074] Using the data 221 to 223 and the previous data transmitter ID [ID-A], the user device B 142 stores the data 231 to 233 shown in Fig. 2 in its own memory. More specifically, the data 231 to 233 contains the following information:

(1) an identifier indicating the original information source; herein, the ID [ID-P] of the information providing device A (a smart poster);
(2) an identifier indicating the previous information transmitter; herein, the ID [ID-A] of the user device A; and
(3) the product advertising or other content information.

[0075] Next, as shown in Fig. 3, the user device B 142 outputs the data 231 to 233 shown in Fig. 3 to the user device C 143. Herein, the ID [ID-B] of the transmitter is also sent at the time of data transmission.

[0076] Using the data 231 to 233 and the previous data transmitter ID [ID-B], the user device C 143 stores the data 241 to 244 shown in Fig. 3 in its own memory. More specifically, the data 241 to 244 contains the following information:

(1) an identifier indicating the original information source; herein, the ID [ID-P] of the information providing device A (a smart poster);
(2) an identifier indicating the information relay device; herein, the ID [ID-A] of the user device A;
(3) an identifier indicating the previous information transmitter; herein, the ID [ID-B] of the user device B; and
(4) the product advertising or other content information.

[0077] Thus, in the processing example wherein each user device sends and receives content together with the device IDs of all devices existing on the content transfer route, each device that receives content stores the device IDs of all devices existing on the content transfer route in memory. At the time of executing a product purchase, processing is conducted to issue all device IDs stored in memory to the content providing server 111. Furthermore, the above device IDs are then issued from the content providing server 111 to the managing server 112. The managing server 112 then uses the device IDs to distribute incentive to the managers and users associated with the devices having the respective device IDs.

[0078] In the processing example described with reference to Figs. 2 and 3, each user device sends and receives content together with the device IDs of all devices existing on the content transfer route. However, as described earlier, processing may also be configured such that content is transferred together with just two device IDs: the device ID of the original content source, and the device ID of the previous content transmitter that directly transmitted the content. In the above processing example, the processing to send, receive, and store data in memory from the user device A 141 to the user device B 142 is similar to that described with reference to Fig. 2. However, the processing to transfer and store data in memory from the user device B 142 to the user device C 143 differs from that shown in Fig. 3.

[0079] The processing example for the above case will now be described with reference to Fig. 4. In the present processing example, the user device B 142 is storing the data 231 to 233 shown in Fig. 4 in its own memory. The data 231 to 233 is similar to that described with reference to Figs. 2 and 3. More specifically, the data 231 to 233 contains the following information:

(1) an identifier indicating the original information source; herein, the ID [ID-P] of the information providing device A (a smart poster);
(2) an identifier indicating the previous information transmitter; herein, the ID [ID-A] of the user device A; and
(3) the product advertising or other content information.

[0080] The user device B 142 then outputs the data 231 to 233 shown in Fig. 4 to the user device C 143. Herein, the ID [ID-B] of the transmitter is also sent at the time of data transmission.

[0081] Using the data 231 to 233 and the previous data transmitter ID [ID-B], the user device C 143 stores the data 251 to 253 shown in Fig. 4 in its own memory. More specifically, the data 251 to 253 contains the following information:

(1) an identifier indicating the original information source; herein, the ID [ID-P] of the information providing device A (a smart poster);
(2) an identifier indicating the previous information transmitter; herein, the ID [ID-B] of the user device B; and
(3) the product advertising or other content information.

[0082] The present processing example differs from that described with reference to Fig. 3 in that the user device C 143 does not store an identifier indicating the information relay device (herein, the ID [ID-A] of the user device A).

[0083] In the present processing example, each user device stores content in memory together with just two device IDs: the device ID of the original content source, and the device ID of the previous content transmitter that directly transmitted the content. At the time of executing a product purchase, processing is conducted to issue the device IDs stored in memory (i.e., the device ID of the original content source and the device ID of the previous transmitter that directly transmitted the content) to the content providing server 111. Furthermore, the above device IDs are then issued from the content providing server 111 to the managing server 112. The managing server 112 then uses the device IDs to distribute incentive to the managers and users associated with the devices having the respective device IDs.

[0084] Thus, in the content transfer processing in accordance with an embodiment of the present invention, when content is repeatedly transferred among user devices, not only is incentive provided to the original content source, but in addition, incentive is distributed to the owners of user devices that transferred the content and contributed to a product purchase. As a result, it becomes possible to encourage a greater number of users to actively transfer content, thereby enabling such users to improve advertising effects and help facilitate product purchases.

[0085] Lastly, an exemplary device configuration will be described with reference to Fig. 5, the exemplary device configuration being that of a device forming part of the system in accordance with an embodiment of the present invention described with reference to Fig. 1. It is possible to realize the content providing server 111, the managing server 112, the information providing devices, and the user devices shown in Fig. 1 by means of typical PC configurations. Moreover, it is also possible to realize the user devices by means of mobile phones, smart cards, or similar technology.

[0086] A basic configuration for one of the above devices is given by way of example as the configuration of the information processing apparatus 200 shown in Fig. 5. More specifically, the information processing apparatus 200 includes: a controller 201 having a CPU or similar component that executes various programs; a communication unit 202 that communicates over a network or at close range; an input unit 203 that accepts operational information input by a user; an output unit 204 realized by a display or similar component; and a storage unit 205 used to store sent and received data, and also used as a storage area for programs or other information.

[0087] If, for example, the information processing apparatus 200 shown in Fig. 5 is the managing server 112, then the communication unit 202 receives information regarding inter-device content transfer in the form of device identifiers for the devices from the information providing device to the one or more user devices that transferred content. The controller 201 then executes processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

[0088] For example, the controller 201 may execute processing to designate the incentive recipients as being the device manager of the information providing device, as well as the device manager associated with the device identifier of the user device that transmitted content to the user device that made a product purchase on the basis of viewing the content. Alternatively, the controller 201 may execute processing to designate the incentive recipients as being the device manager of the information providing device, as well as device managers associated with the device identifiers for all devices on the content transfer route leading to the user device that transmitted content to the user device that made a product purchase on the basis of viewing the content.

[0089] As another example, the information processing apparatus 200 shown in Fig. 5 may operate as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content. In this case, at the time of receiving content from an information providing device or another user device, the communication unit 202 conducts processing to receive an identifier for the information providing device and an identifier for the content transmitting user device, and then store the received data in the storage unit 205. In addition, at the time of transmitting content stored in the storage unit 205, the controller 201 executes processing to configure the transmission data to be content together with the identifier of the information providing device and the device identifier of the information processing apparatus 200 itself.

[0090] It should also be appreciated that the above information processing apparatus 200 may also be configured such that, when the communication unit 202 re-

ceives content, the communication unit 202 also receives device identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device. In addition, when the controller 201 transmits content stored in the storage unit 205, the controller 201 may configure the transmission data to be the content together with device identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting device, as well as the device identifier of the information processing apparatus 200 itself.

[0091] The exemplary device configuration shown in Fig. 5 illustrates an example of a device usable as the content providing server 111, the managing server 112, the information providing devices, and the user devices shown in Fig. 1. However, the above may also be configured to include additional elements, or to lack a portion of the elements shown in Fig. 5. For example, it is possible to use a smart card as a user device, and in such a case, an input unit is typically not included.

[0092] In the case where a smart card is used as a user device, the smart card first acquires data from an information providing device, and then the data stored in the memory of the smart card is read by a PC having R/W functions, thereby enabling processing to transfer the data to another device or make a product purchase using the PC. When executing such processing, the smart card ID or the PC ID may then be transferred among respective user devices similarly to that described earlier and with reference to Figs. 2 to 4.

[0093] The foregoing thus describes the present invention in detail and with reference to specific embodiments thereof. However, it should be apparent to those skilled in the art that modifications and substitutions of the foregoing exemplary embodiments may be made without departing from the spirit and scope of the present invention. In other words, the foregoing discloses the present invention by means of examples, and is not to be interpreted as being limiting. The scope of the present invention is to be determined in conjunction with the attached claims. For example, although the foregoing detailed description uses RFID as an example of the means whereby information is sent and received among user devices, methods other than the above may also be implemented, such as IrDA (infrared communication), Bluetooth™, and wireless LAN (IEEE 802.11).

[0094] In addition, it is possible to execute the series of processes described in the present specification by means of hardware, software, or a compound configuration of both hardware and software. In the case of execution by means of software, a program stating a processing sequence may be installed and executed in the memory of a computer built into special-purpose hardware. Alternatively, the program may be installed and executed on a general-purpose computer capable of executing various processing. For example, the program may be recorded onto a recording medium in advance and then installed onto a computer. In addition to being installed onto a computer from a recording medium, the program may also be received over a network such as a LAN (Local Area Network) or the Internet, and then installed to a recording medium such as an internal hard disk.

[0095] It should also be appreciated that the various processes described in the present specification are not limited to being executed in a time series following that described herein, but may also be executed in parallel or individually, depending on the processing capability of the apparatus executing the process or other factors. In addition, in the present specification, a system refers to the logical assembly of a plurality of apparatus, and is not limited to a configuration wherein respective apparatus are housed in a single physical unit.

[0096] The present application contains subject matter related to that disclosed in Japanese Priority Patent Application JP 2008-126360 filed in the Japan Patent Office on May 13, 2008, the entire content of which is hereby incorporated by reference.

[0097] It should be understood by those skilled in the art that various modifications, combinations, sub-combinations and alterations may occur depending on design requirements and other factors insofar as they are within the scope of the appended claims or the equivalents thereof.

Claims

1. An information processing apparatus operating as a managing server that distributes incentive using transfer device information with respect to content, comprising:

   a communication unit configured to receive inter-device transfer information for output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers; and

   a controller configured to execute processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

2. The information processing apparatus according to Claim 1, wherein the controller is configured to execute processing to designate the incentive recipients as being the manager of the information providing device and the device manager associated with the device identifier of the user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

3. The information processing apparatus according to Claim 1, wherein the controller is configured to exe-

cute processing to designate the incentive recipients as being the manager of the information providing device and the device managers associated with the device identifiers of all devices on the content transfer route leading to the user device that transmitted the content to a user device that executed a product purchase on the basis of viewing the content.

4. The information processing apparatus according to Claims 1 to 3, wherein the managing server is configured to dynamically set or modify the incentive distribution ratios for the incentive recipients.

5. An information processing apparatus operating as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, the apparatus comprising:

a communication unit configured to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for a content-transmitting user device;
a storage unit configured to store data received by the communication unit; and
a controller configured such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be the content together with both the identifier of the information providing device and the device identifier of the apparatus itself.

6. The information processing apparatus according to Claim 5, wherein
the communication is configured such that, when receiving the content, the communication unit receives the device identifiers for all devices on the content transfer route leading from the information providing device to the content-transmitting user device, and
the controller is configured such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with the identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device, as well as the device identifier of the apparatus itself.

7. An information processing system, comprising:

a content providing server that provides content;
a managing server that executes output management of content to devices, as well as incentive distribution management using the transfer device information of output content;
an information providing device that initially outputs the content; and
a plurality of user devices that acquire the output content from the information providing device or execute inter-device transfer of such content;
wherein
when transferring content, the content transmitting user device that executes content transfer additionally transmits an identifier for the information providing device, as well as an identifier for the content transmitting user device,
the content receiving user device that receives the content stores the identifier of the information providing device and the identifier of the content transmitting user device in memory, and
when making a product purchase on the basis of viewing the content, the content receiving user device outputs the device identifiers stored in memory, and
the managing server uses the device identifiers output from a user device at the time of product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

8. The information processing system according to Claim 7, wherein
the content transmitting device is configured such that, when transferring content, the content transmitting device additionally transmits an identifier for the information providing device, an identifier for the content transmitting device, as well as identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device,
the content receiving user device is configured to store identifiers for all devices on the content transfer route leading from the information providing device to the content transmitting user device in memory, and when making a product purchase on the basis of viewing the content, the content receiving device outputs the device identifiers stored in memory, and
the managing server is configured to use the device identifiers for all devices on the content transfer route that were output from a user device at the time of the product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

9. The information processing system according to Claim 7 or 8, wherein
the content receiving user device is configured such that, when making a product purchase on the basis of viewing the content, the content receiving device issues a notification to the content providing server containing the device identifiers stored in memory, and
the managing server is configured to use the device identifiers for the devices on the content transfer route that were issued to the content providing server to designate the incentive recipients as being the

device managers associated with the device identifiers.

10. The information processing system according to Claims 7 to 9, wherein the information providing device that initially outputs the content is a public terminal enabling information acquisition therefrom by user devices.

11. The information processing system according to Claims 7 to 10, wherein the information providing device that initially outputs the content is a device that presents information, thereby enabling information acquisition therefrom over a network.

12. The information processing system according to Claims 7 to 11, wherein
the content is product advertising content, and
the plurality of user devices is configured such that, when making a product purchase on the basis of viewing the advertising content, the purchasing user device issues a notification to the content providing server containing the device identifiers stored in memory.

13. The information processing system according to Claims 7 to 12, wherein the managing server or the content providing server is configured to dynamically set or modify the incentive distribution ratios for the incentive recipients.

14. An information processing method, comprising the steps of:

causing a content providing server to provide content;
causing a managing server to execute output management of content to devices, as well as incentive distribution management using the transfer device information of output content;
causing an information providing device to initially output the content;
when executing processing to transfer content output from the information providing device, causing a content transmitting user device to additionally transmit an identifier for the information providing device, as well as an identifier for the content transmitting device;
causing a content receiving user device to store the identifier for the information providing device and the identifier for the content transmitting user device in memory, and when making a product purchase on the basis of viewing the content, causing the content receiving user device to output the device identifiers stored in memory; and
causing a managing server to use the device identifiers output from a user device at the time of the product purchase to designate the incentive recipients as being the device managers associated with the device identifiers.

15. An information processing method executed by an information processing apparatus operating as a managing server that executes incentive distribution management using transfer device information with respect to content, the method comprising the steps of:

causing a communication unit to receive inter-device transfer information for output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices executed content transfers; and
causing a controller to execute processing to designate the incentive recipients as being the device managers associated with the acquired device identifiers.

16. An information processing method executed by an information processing apparatus operating as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, the method comprising the steps of:

causing a communication unit to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for a content transmitting user device;
causing a controller to store data received in the communicating step in a storage unit; and
causing the controller to operate such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together with both the identifier of the information providing device and the device identifier of the apparatus itself.

17. A computer program product that causes information processing to be executed in an information processing apparatus operating as a managing server that executes incentive distribution management using transfer content device information for content, the program product causing execution of the steps of:

causing a communication unit to receive inter-device transfer information for output content from an information providing device, the information being in the form of device identifiers for at least the information providing device and one or more user devices that executed content transfers; and
causing a controller to execute processing to

designate the incentive recipients as being the device managers associated with the acquired device identifiers.

18. A computer program product that causes information processing to be executed in an information processing apparatus operating as a user device that acquires output content from an information providing device, or executes inter-device transfer of such content, the program product causing execution of the steps of:

causing a communication unit to receive content from the information providing device or another user device, while also receiving an identifier for the information providing device as well as an identifier for one or more content transmitting user devices;
causing a controller to store data received in the communicating step in a storage unit; and
causing the controller to operate such that, when transmitting content stored in the storage unit, the controller configures the transmission data to be content together both the identifier of the information providing device and the device identifier of the apparatus itself.

FIG. 1

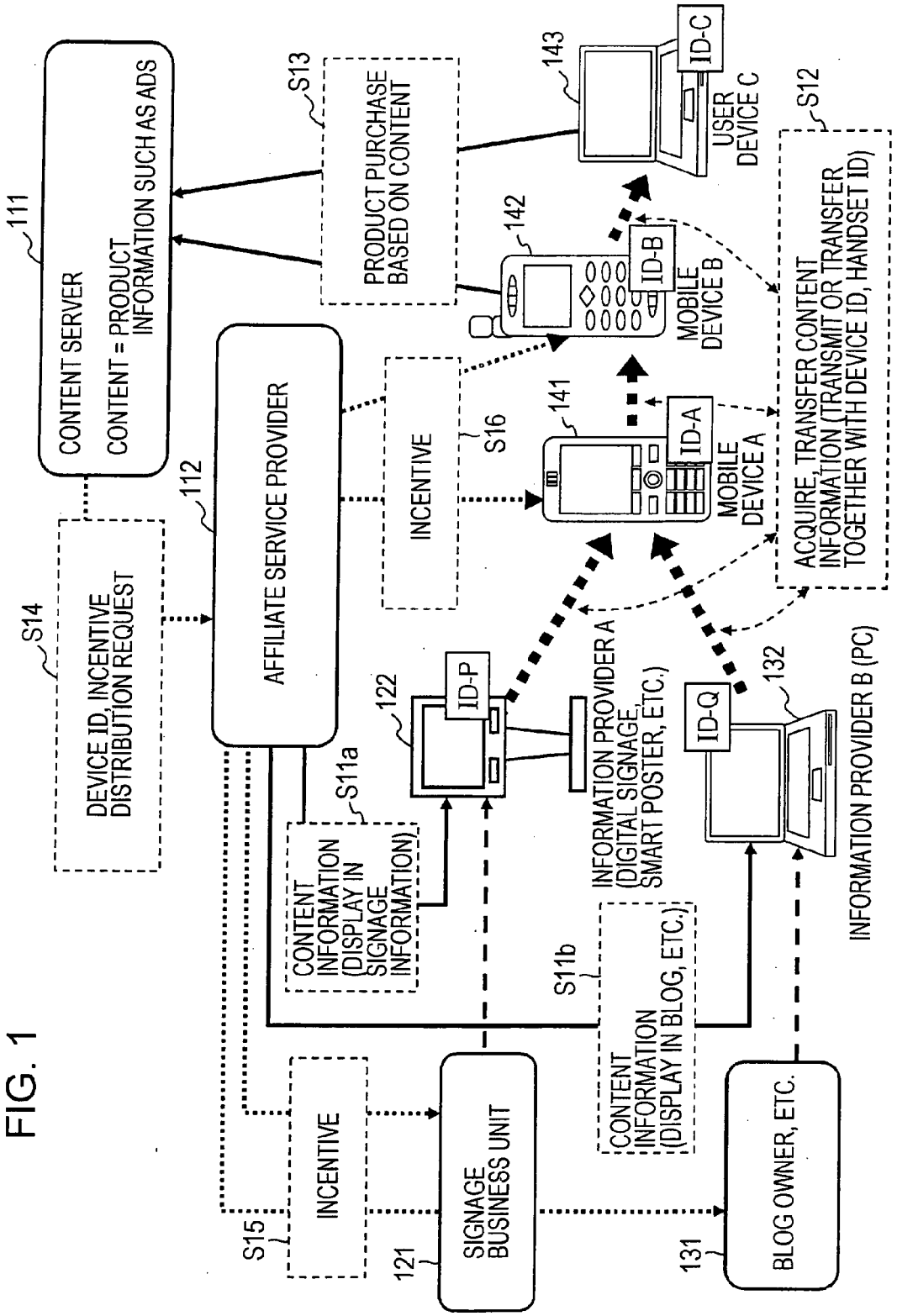

111
CONTENT SERVER
CONTENT = PRODUCT INFORMATION SUCH AS ADS
S13
PRODUCT PURCHASE BASED ON CONTENT
143
ID-C
USER DEVICE C
S12
ACQUIRE, TRANSFER CONTENT INFORMATION (TRANSMIT OR TRANSFER TOGETHER WITH DEVICE ID, HANDSET ID)
142
ID-B
MOBILE DEVICE B
S14
DEVICE ID, INCENTIVE DISTRIBUTION REQUEST
112
AFFILIATE SERVICE PROVIDER
INCENTIVE
S16
141
ID-A
MOBILE DEVICE A
122
ID-P
INFORMATION PROVIDER A (DIGITAL SIGNAGE, SMART POSTER, ETC.)
ID-Q
132
INFORMATION PROVIDER B (PC)
S11a
CONTENT INFORMATION (DISPLAY IN SIGNAGE INFORMATION)
S11b
CONTENT INFORMATION (DISPLAY IN BLOG, ETC.)
S15
INCENTIVE
121
SIGNAGE BUSINESS UNIT
131
BLOG OWNER, ETC.

FIG. 2

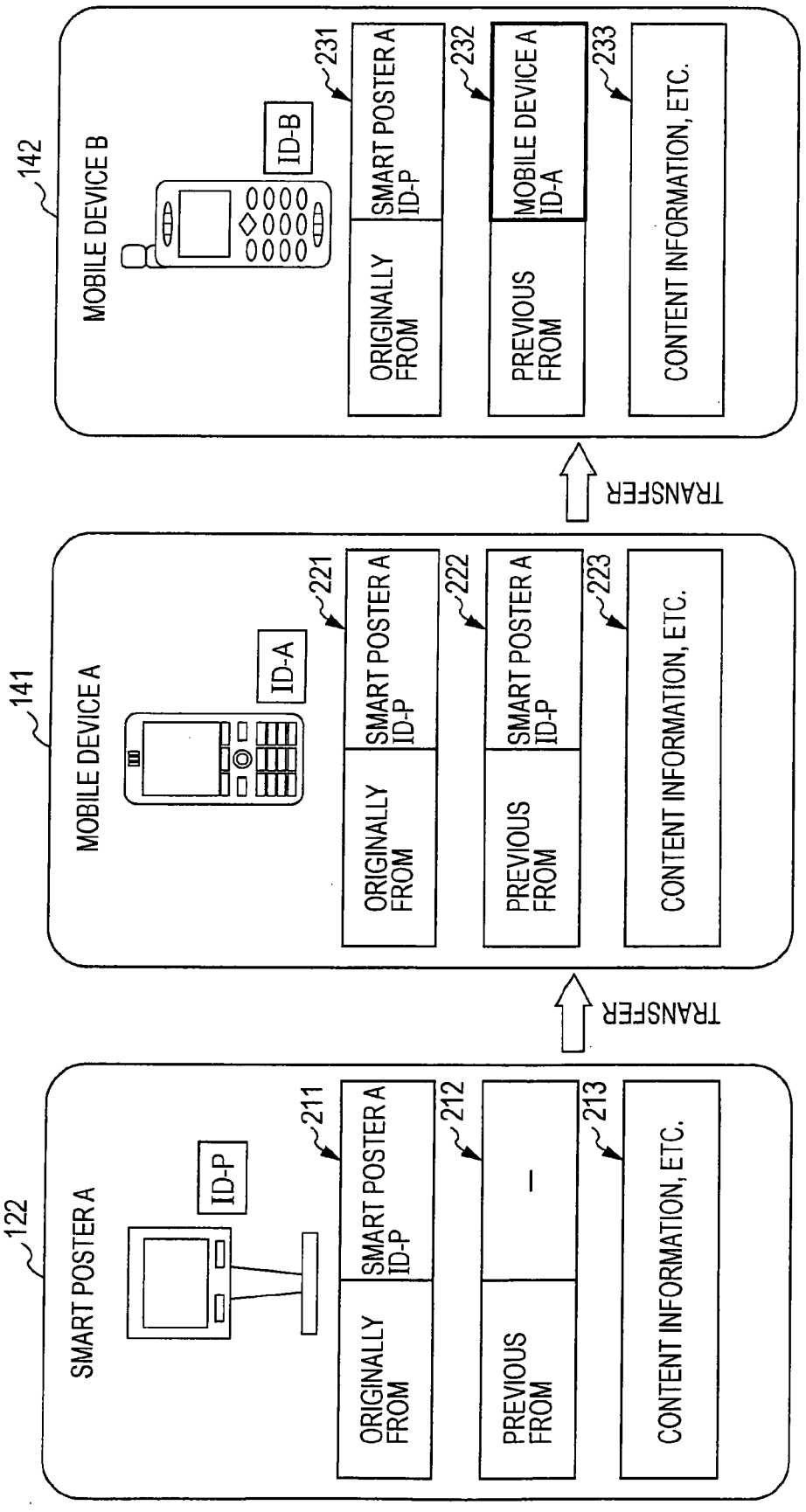

122
SMART POSTER A
ID-P
211
SMART POSTER A ID-P
ORIGINALLY FROM
212
–
PREVIOUS FROM
213
CONTENT INFORMATION, ETC.
TRANSFER
141
MOBILE DEVICE A
ID-A
221
SMART POSTER A ID-P
ORIGINALLY FROM
222
SMART POSTER A ID-P
PREVIOUS FROM
223
CONTENT INFORMATION, ETC.
TRANSFER
142
MOBILE DEVICE B
ID-B
231
SMART POSTER A ID-P
ORIGINALLY FROM
232
MOBILE DEVICE A ID-A
PREVIOUS FROM
233
CONTENT INFORMATION, ETC.

FIG. 3

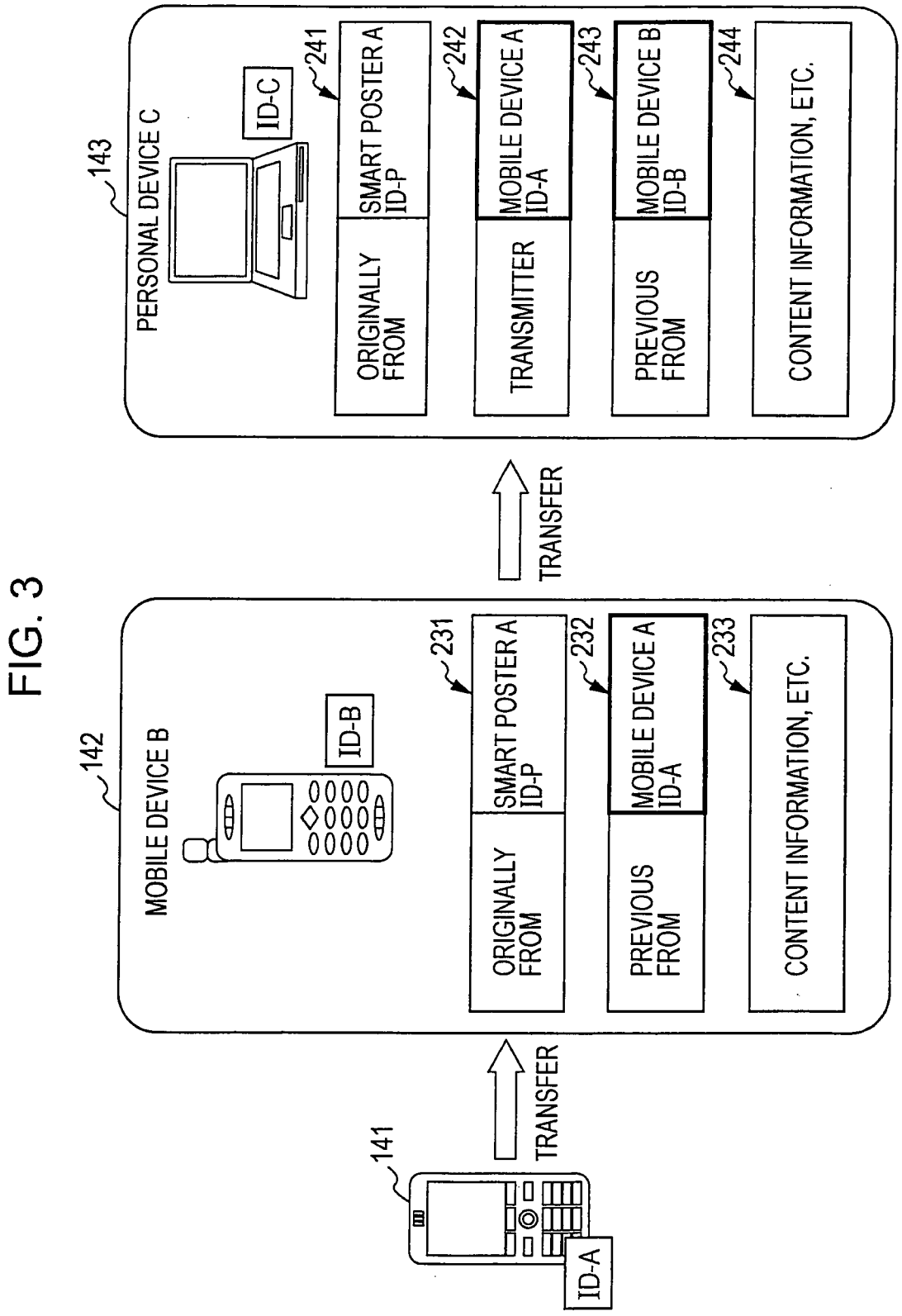
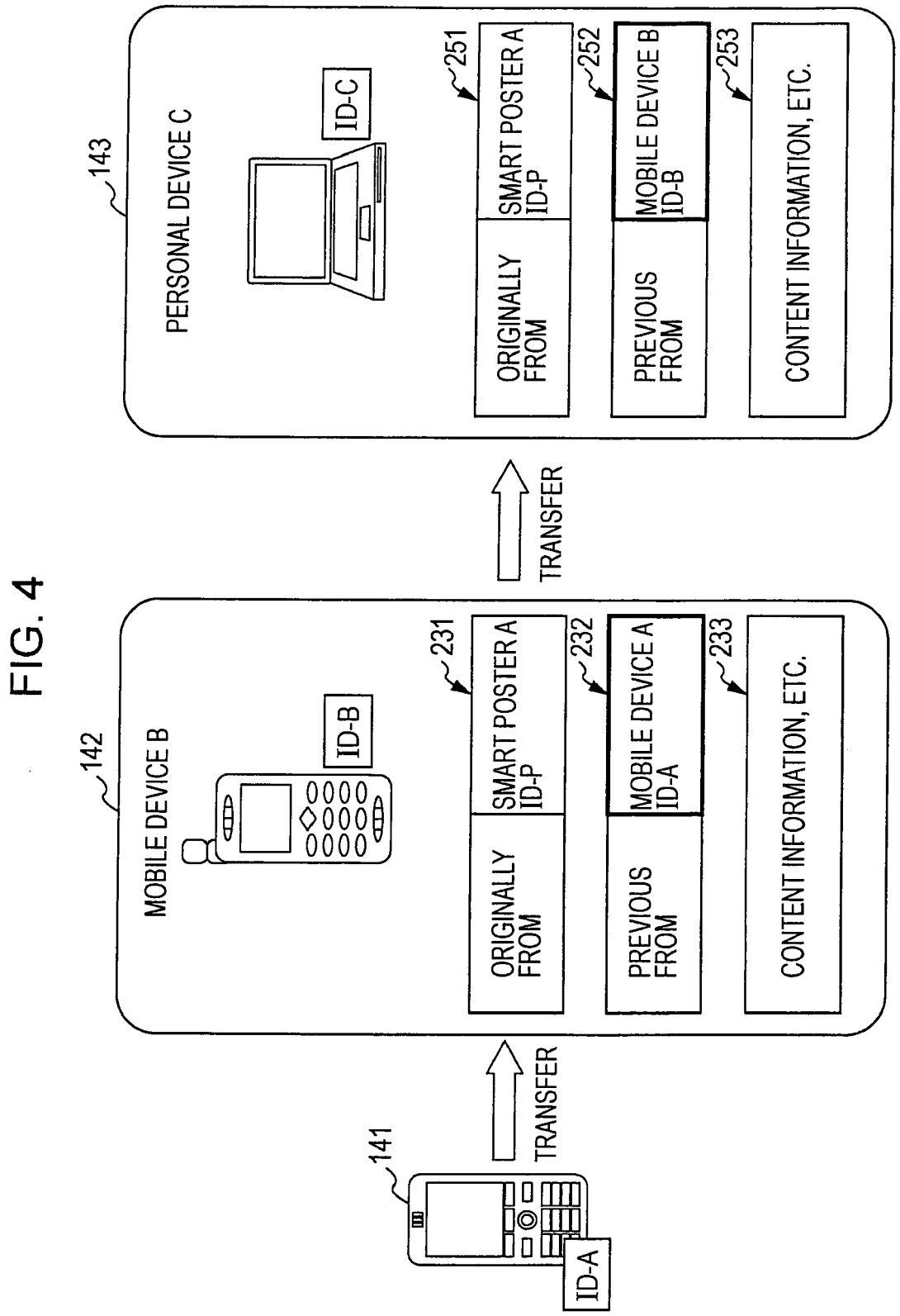

141
ID-A
TRANSFER
142
MOBILE DEVICE B
ID-B
231
SMART POSTER A
ID-P
ORIGINALLY
FROM
232
MOBILE DEVICE A
ID-A
PREVIOUS
FROM
233
CONTENT INFORMATION, ETC.
TRANSFER
143
PERSONAL DEVICE C
ID-C
241
SMART POSTER A
ID-P
ORIGINALLY
FROM
242
MOBILE DEVICE A
ID-A
TRANSMITTER
243
MOBILE DEVICE B
ID-B
PREVIOUS
FROM
244
CONTENT INFORMATION, ETC.

FIG. 4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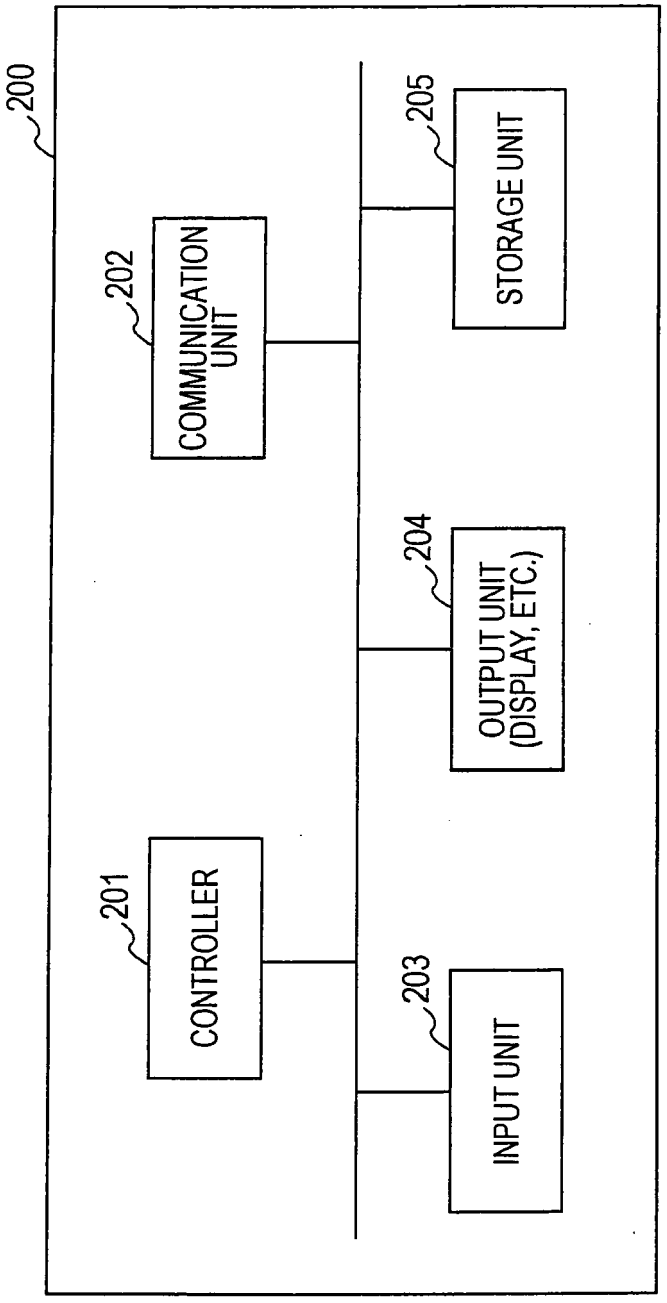
ID-A
TRANSFER
142
MOBILE DEVICE B
ID-B
231
SMART POSTER A
ID-P
ORIGINALLY FROM
232
MOBILE DEVICE A
ID-A
PREVIOUS FROM
233
CONTENT INFORMATION, ETC.
TRANSFER
143
PERSONAL DEVICE C
ID-C
251
SMART POSTER A
ID-P
ORIGINALLY FROM
252
MOBILE DEVICE B
ID-B
PREVIOUS FROM
253
CONTENT INFORMATION, ETC.

FIG. 5


200
201
CONTROLLER
202
COMMUNICATION UNIT
203
INPUT UNIT
204
OUTPUT UNIT (DISPLAY, ETC.)
205
STORAGE UNIT

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2002269508 A **[0004]**
- JP 2008126360 A **[0096]**